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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/698,310	10/31/2003	Tadashi Shimazaki	16UL02095	9803	
Patrick W. Rasche Armstrong Teasdale LLP Suite 2600 One Metropolitan Square St. Louis, MO 63102			EXAMINER		
			JAWORSKI, FRANCIS J		
			ART UNIT	PAPER NUMBER	
			3768		
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			07/23/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary Toke Staminer Art Unit Javorski Francis J. 3768 Art Unit 3768 Ar			Application No.	Applicant(s)	·					
## Disposition of Claims ## Art Unit Jaworaki Francis J. 3788 ## The MAILING DATE of this communication appears on the cover sheet with the correspondence address Portod for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. **East of the Property is specified above, the maximum standary period will apply and will expire skill (MONTHS from heraling date of this communication to the property of the	Office Action Summary		10/698.310	SHIMAZAKI, TAD	ASHI					
Jaworski Francis J. James Jaworski Francis J. J										
Period for Reply A SHORTENEO STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. after SX (6) MONTHS from the making date of this communication. 11 No period for reply is specified above, the maximus tabutory period will apply and will expire XC (6) MONTHS from the making date of this communication. 11 No period for reply is specified above, the maximus tabutory period will apply and will expire XC (6) MONTHS from the making date of this communication, even if smally filled, may reduce any earned patent term adjustment. See 37 CFR 1704(b). Status 1) ☑ Responsive to communication(s) filed on Q. 2a ☑ This action is FINAL. 2b) ☐ This action is non-final. 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) ☑ Claim(s) 1. 20 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5) ☑ Claim(s) 1. 8. 11 - 14. 19 - 20 is/are rejected. 7) ☐ Claim(s) 1. 8. 11 - 14. 19 - 20 is/are rejected. 7) ☐ Claim(s) are subject to restriction and/or election requirement. Application Papers 9) ☐ The specification is objected to by the Examiner. 10) ☐ The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.86(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.721(d). 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) ☐ Acknowledgment, is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). 3) ☐ All b) ☐ Some * C) ☐ None of		·	Jaworski Francis J.		i 					
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. Extensions or them may be available under the provisions of 37 CFR 1.130(a), in a event, however, may angly be timely field If NO period for regiv is specified above, the maximum statutory period will apply and will assure SIX (s) MONTHS from the mating date of this communication or regivery within the set or exceeded period for regiv is specified above, the maximum statutory period will apply and will assure SIX (s) MONTHS from the mating date of this communication, even if timely fleed, may reduce any evening place that the adjustment. Set 37 CFR 1.764(b). Status 1) Responsive to communication(s) filed on Q. 2a) This action is FINAL. 2b) This action is non-final. 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) Claim(s) 1-22 is/are pending in the application. 4) Claim(s) 1-22 is/are pending in the application. 4) Claim(s) 1-22 is/are allowed. 5) Claim(s) 9-10, 15-18 is/are allowed. 6) Claim(s) 9-10, 15-18 is/are allowed. 6) Claim(s) 9-10, 15-18 is/are allowed. 6) Claim(s)	Period fo	The MAILING DATE of this communication appears on the cover sheet with the correspondence address								
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DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6-8, 14 as amended again rejected and new claims 19-20 are also rejected under 35 U.S.C. 102(b) as being anticipated by Muzilla et al (US5908391).

Muzilla et al in col. 4 lines 16 – 29 and col. 6 lines 14 –32 as exemplary teaches an ultrasonic pulse transmission system and method for color flow imaging which specifies a multiple focal zone set and includes firing a first frame of successive scanlines with each individual scanline having a first fixed focus to effectively produce a preliminary frame set, then producing a second such preliminary frame of scanlines having a further focus, in the course of which there has effectively been an acquiring of a second acoustic line signal belonging to a second frame, such that the adaptively averaged frame which is finally composited from the sets has effectively represented in it a set of acoustic lines each of which has been composited across multiple frames and with intervening differing acoustic lines fired from the the next constituent frame prior to returning to firing the same constituent acoustic line for the next focal zone.

[Alternately stated, each acoustic line signal of the adaptively averaged final. frame has resulted from a firing belonging to a first frame with an interleaving of second acoustic line signals from a subsequent frame prior to conducting the next of P pulse

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transmissions along the first acoustic line needed to represent the P constituent focal zones.]

Since P in Muzilla et al could reasonably be "2", claim 2 is met.

Since Muzilla et al pertains to electronically steered scanline sets, claim 3 is met.

Note that the rejected claims do not distinguish between an initial frame and a finally composited display frame, nor do they necessarily pertain to activities within the assemblage of an initial packet. Hence applicant's arguments not withstanding, in Muzilla et al further focal zone locations involving different scanlines of data across the region of interest for colorflow image assemblage are obtained prior to final obtainance of a temporally averaged or zone-blended scanline for the display frame.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4 and 11 – 12 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Muzilla et al as argued above, further in view of Mochizuki et al (US5152294) since on the one hand the latter evidences that it would have been well-known to combine mechanical scanning orthogonal to electronic planar scanning in order for example to assemble bloodflow information in 3-D, see col. 1 lines 13 - 26. In the trivial sense then, if the entire process of Muzilla et al were repeated across successive orthogonal increments to assemble a 3-D volume, then the acoustic line

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signals associated with the adaptively averaged frames of each scan direction would inherently belong to different spatial frames since mechanical and electronic scanning in the orthogonal direction are well-known for purposes of assembling a 3-D volume, the same interpretation regarding acoustic line signal-frame associations would apply to performing theorthogonal component of a 3-D scan electronically.

Claims 5, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muzilla et al as applied above, and further in view of Dubberstein et al (US6159153), since the latter evidences that it was known to perform simultaneous transmissions as analogous to multi-line receptions in association with ultrasound imaging particularly volume imaging in order to improve frame rates.

Allowable Subject Matter

Claims 9 – 10, 15 - 18 are allowed.

Response to Arguments

As earlier noted, since Muzilla et al effectively assemble any individual acoustic signal line or scanline by compositing from initial frames and adaptively averaging, the final averaged frame may be characterized as being assembled from individual acoustic line sets obtained by interleaving re-transmission along a given line with different acoustic line receptions in differing scan frames. Since differing scanlines associated with at least the Doppler region of interest for given frames are acquired before returning to scanning at further focal zones and then compositing the result as a

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weighted average into a display frame comprised of such finally composited scanlines

the claims which are rejected yet read on this prior art.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Kristoffersen US6039692 is cited as of general interest as pertaining to a sub-frame

interleave process.

Any inquiry concerning this communication should be directed to Jaworski

Francis J. at telephone number 571-272-4738.

FJJ:fjj

07-01-07

Francis J. Jaworski

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Primary Examiner